Title: Intrapleural streptokinase treatment of complicated parapneumonic effusions and empyemas

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Body: INTRODUCTION: Intrapleural fibrinolytics are considered as an acceptable treatment modality in selected patients with complicated parapneumonic effusion (CPE) and empyema that may reduce the need for surgery. METHODS: In order to assess the clinical efficacy of streptokinase use, we retrospectively analysed data of patients with empyema and CPE in patients whom were treated with intrapleural streptokinase treatment in last five years. RESULTS: Eighty-eight patients treated with intrapleural streptokinase between 2007-2012 in Uludag University Pulmonology Department were recruited. The mean age of the study group was 54±17 and 74% were male. According to the Light’s pleural effusion classification 30% of the patients were Stage2 while 17% were Stage3, 37% were Stage4, 10% were Stage5, 4% were Stage6 and 2% were Stage7. Hemorrhagic complications were noted in 10 patients. Successful drainage was obtained in 61% in the overall group. 75% of the patients recovered without need for surgery in the follow-up period. The pleural fluid lactate dehydrogenase(LDH) and adenosine deaminase(ADA) levels were significantly higher and glucose levels were lower in patients whom recovered with intrapleural streptokinase without surgery when compared with the ones who need surgery(p=0.04, p=0.03, p=0.03, respectively). CONCLUSION: Intrapleural streptokinase administration improves pleural drainage and may decrease the need for operative intervention. Therefore is considered one of the safe and effective treatment option for patients with parapneumonic effusion and empyema. Furthermore according to our results some biochemical parameters of pleural fluid might help to predict the response to treatment.